

REMARKSSummary

This Amendment is responsive to the Office Action mailed on January 2, 2003. Claims 1, 2, 46, and 47 are amended herein. New claims 91-96 are added. Claims 1-96 are pending.

As a preliminary matter, Applicants note that they filed two Supplemental Information Disclosure Statements after the mailing date of the present Office Action. In particular, Applicants filed a Third Supplemental Information Disclosure Statement on January 8, 2003 and a Fourth Supplemental Information Disclosure Statement on February 18, 2003. Applicants request the Examiner's consideration of these Information Disclosure Statements and the return of initialed copies of the respective PTO-1449 Forms with the next communication.

Claims 1-90 stand rejected pursuant to 35 U.S.C. § 112 as being indefinite. Claims 1 and 46 are amended herein and are believed to overcome the Examiner's objections for the reasons set forth in detail below.

Claims 1-4, 6, 12-34, 39-49, 51, 57-79, and 84-90 stand rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over the combination of Savitzky (US 6,012,083) and Chan (US 6,378,070).

Claims 5, 35-38, 50 and 80-83 stand rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over the combination of Savitzky, Chan, and Newton (US 6,334,142).

Claims 7-11 and 52-56 stand rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over the combination of Savitzky, Chan, and Pearson (US 6,023,684).

Applicants respectfully traverse the foregoing rejections in view of the amended claims and the following comments.

Discussion of Amended Claims and New Claims

Claims 1 and 46 are amended to specify that the spooling server receives an instruction to initiate the print job for printing at a designated printer. In response to the instruction, the spooling server then initiates the print job for printing at the designated printer. When a polling request is received for the initiated print job from a printer polling device associated with the designated printer, the initiated print job is sent to the printer polling device. Support for amended claims 1 and 46 may be found in the specification at, for example, page 10, line 11 through page 11, line 12; page 26, lines 4-8; page 27, lines 7-22.

In other words, with Applicants' claimed invention, the printing of the print job is initiated at the spooling server, rather than at the printer polling device. As will be explained more fully below, the instructions to initiate the print job can come from a variety of sources, including, for example, from the print job source itself, from a separate interface to the spooling server, such as a web browser or the like, or from an interface associated with the printer polling device.

Claims 2 and 47 are amended to conform to the amendments to claims 1 and 46, respectively.

New claims 91 and 94 specify that the instructions are forwarded from an interface associated with a print job source together with the print job (see, e.g., page 27, lines 16-17).

New claims 92 and 95 specify that the instructions are forwarded from an interface remote from a print job source and remote from the printer polling device (see, e.g., page 26, lines 3-8).

New claims 93 and 96 specify that instructions are forwarded from an interface associated with the printer polling device (see, e.g., page 26, line 3-5).

Discussion of the Examiner's Rejections Under 35 U.S.C. § 112

The Examiner has rejected claims 1-90 pursuant to 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants respectfully submit that the amended claims overcome the Examiner's rejection under 35 U.S.C. § 112.

In rejecting Applicant's arguments set forth in the Response filed on November 11, 2002, the Examiner indicates that "The limitation of 'the print job', which is cited in the independent claims 1 and 46, is not for printing but just for storing at the server. The spooling server just receives and stores the print job. The spooling server does not know to do anything with the print job but just for storing; and forwarding the print job to the requested device." Office Action, page 12.

The amended claims now specify that instructions are forwarded to the spooling server for initiating the printing of the print job at a designated printer. In response to the instructions, the print job is initiated for printing and can be forwarded to the printer polling device on the receipt of a poll.

Contrary to the Examiner's assertions, the print job does not have to specify command parameters to instruct the spooling server to process or transmit the print job for printing. The spooling server receives instructions to initiate the print job, which instructions may be received from a variety of sources, as described above. Applicants submit that there are a variety of well-known ways of implementing the storage of a print job on a server. Applicant does not seek protection of the various ways of storing a print job on a server. The particular method used to store a print job on the server is not pertinent to Applicants' invention. Rather, an inventive aspect of the invention is that, once the print job is stored at the spooling server, it can be initiated for printing at a designated printer by instructions

received at the spooling server. The initiated print job is then printed after receipt of a poll from the polling device associated with the designated printer. It is one novel concept of Applicants' invention that "pull technology" is employed to retrieve print jobs, which provides greater security as compared to blindly "pushing" a print job to an intended recipient. Further, with Applicants' invention, all print jobs are initiated by the spooling server, rather than the polling device. The Examiner is referred to the Brief Discussion of the Present Invention below for further details of the invention in accordance with the claims as amended.

Applicants respectfully submit that the claims as amended particularly point out and distinctly identify the subject matter which Applicants regard as the invention. The details referenced by the Examiner are particular implementation details that are disclosed in the specification and/or would be readily apparent to those skilled in the art upon learning of the inventive concept. Therefore, Applicants respectfully request withdrawal of the rejections under 35 U.S.C § 112.

Brief Discussion of the Present Invention

With the present invention as defined in the amended claims, the identification of a destination printer and the initiation of printing flow through the spooling server. Provided below are three example modes of operation of the invention in terms of how the spooling server may be instructed to initiate a print job for printing at a designated printer. These examples are provided by way of illustration only to assist in the Examiner's understanding of the present invention, and are in no way intended to limit the scope of the claims.

Example Case 1: The destination printer is indicated substantially at the time the document is uploaded to the

spooling server. Printing of the document starts on receipt of a poll from the printer polling device associated with that particular printer. The upload to the spooling server can be via a special print driver, a web site, an e-mail message, or the like (see, e.g., page 17, line 16 through page 17, line 3 of Applicants' specification). The key aspect in this example is that the destination printer has been identified in an instruction sent to the spooling server substantially at the time the print job is submitted to the printer. This example is embodied in new claims 91 and 94.

Example Case 2: The print job is uploaded (via print driver, web site, e-mail, etc.) but no destination printer is selected at the time of uploading. The print job is stored on the spooling server and not printed immediately. Later, via the web site, e-mail, or other interfaces, the print job is initiated for printing at a designated printer (i.e. selected to be printed at a specific printer). This initiation of printing occurs by instruction to the server from any terminal or interface connected to the spooling server. This terminal may be the original print job source, which is used to send the instruction at a later time from the original upload, it may be any other web-connected client, it may be an e-mail, it may be an automated interface to some other system, or the like. This example is embodied in new claims 92 and 95.

Example Case 3: This example is a special situation of the example of case 2, where the instruction to print on a designated printer is transmitted from the same terminal that the printer is connected to (e.g., the printer polling device). The actual inner workings of the invention from the spooling server's point of view is that:

- (a) the functionality of the printer polling device in instructing the spooling server to initiate printing of a print job

is separate from:

- (b) the functionality that is used to poll the spooling server to obtain the initiated print job from the server for printing.

The two processes co-exist on the same printer polling device. However, the printer polling device associated with the printer is just a very convenient place to transmit the initiation instructions from. This example is embodied in new claims 93 and 96

In each of the above example cases, the polling communication between the server and the printer polling device is identical. It is irrelevant how instructions to print the print job on a designated printer arrive at the spooling server. Once the spooling server has been so instructed and the print job is initiated, the process of transmitting the print job for printing on the designated printer is the same.

Discussion of Savitzky in Combination With Chan

Savitzky is directed at the rendering of a web page (i.e. a Hypertext Markup Language (HTML) document) as requested from a web server by a browser. Savitzky does not teach the transfer of print jobs over a network as claimed by Applicants. The art of dealing with HTML web pages as disclosed in Savitzky is quite distinct from the art of print spoolers for receiving, storing and forwarding print jobs as claimed by Applicants. As discussed in detail in Applicants' November 11, 2002 Response to the previous Office Action, which is incorporated herein by reference, the concepts disclosed in Savitzky are not applicable to Applicants' claimed invention.

The Examiner has acknowledged that Savitzky does not disclose a method of polling a spooling server to retrieve a print job stored at the spooling server as claimed by Applicants

(see, Office Action, page 4). The Examiner cites to Chan as disclosing that a document stored on the spooling server is forwarded to a device upon request.

Chan discloses a system for secure printing, including a local computer 100, a network 110, a directory server 120, a document store 130, a secure printer 140, and a billing engine 150 (Col. 3, lines 20-34). The document store can be a modified print spooler or print server process which has access to a large amount of data storage, for example disk drive 135 (Col. 3, lines 62-65). The spooler stores the documents, rather than forwarding them to a specific printer. The spooler is modified to receive requests from printers for specific documents, search for the specific document, and transfer the document to the requesting printer (Col. 3, line 65 through Col. 4, line 5). The printer may include an integral smart card reader 280 (Col. 4, lines 45-47).

In operation, the intended recipient of the document, which has been stored in the document store 130, inserts a smart card into the smart card reader 280 of the printer 140. The smart card includes the recipient's identity and security information. The printer may then request entry of a PIN number from the intended recipient. The smart card forwards the identity to the printer's CPU, which generates a message which is then forwarded to the document store 130. The document store 130 searches the hard disk 135 for any documents having the same identity. Status information may be displayed indicating located documents with the same identity. Secure information is then exchanged before any identified documents are printed (Col. 6, line 58 through Col. 7, line 50).

Therefore in Chan, the process of printing a print job is initiated at the printer and the print job data is transmitted to the printer in direct response to this initiation request. In contrast, with the present invention, the initiation of the print job for printing occurs at the spooling server. Further, unlike

Chan, even though initiation of printing occurs at the server with Applicants' invention, the printer polling device initiates all communication exchanges between the spooling server by polling the spooling server to determine if it has any initiated documents destined for the printer associated with that printer polling device. This is important because the network path from the spooling server to the printer polling device commonly flows through a firewall router that restricts initiation of incoming connections but allows outgoing connections.

If one skilled in the art were to attempt to apply Chan directly as claimed in the case of a firewall, example cases 2 and 1 mentioned above would not be possible because there would be no way for the printer to know that a print job was available. Only the server has this information in these two cases.

Applicants' claimed method and apparatus is very different from the methods disclosed by Chan, because the present invention makes no distinction between the case 3 example and the other examples. With the present invention, initiation of printing (as far as the printer polling device is concerned) happens in the same manner in all cases. The spooling server sends the print job in response to the periodic polling request initiated by the polling print device. The print job is not directly sent to the designated printer in response to the user interface interaction at the terminal that instructed the server to initiate the print job for printing.

Further, the present invention identifies document uploaders/owners and also identifies destination printers. However, the present invention does not have to identify intended recipients. In contrast, the system of Chan relies on intended recipients with corresponding identifiers of print jobs (documents). Although, in some embodiments, the present invention may store print jobs (documents) by the user account number of the original uploader, use of this information is not required

during the sending of print jobs to the printer. Also, with Applicants' invention, this account number identifies the uploading sender/owner of the document, not an intended recipient as in Chan.

Applicant respectfully submits that the Examiner may be equating the intended recipient of Chan with the designated printer of Applicants' claims. However, Chan clearly describes the intended recipient and the designated or destination printer as distinct things. The concept disclosed in Chan is that a single physical printer can be securely used by multiple recipients identified by a cryptographic smart card that is temporarily installed in the printer. Such a concept is distinct from Applicants' invention, which enables a user to send a request, from virtually any location, to initiate a document to be printed at any designated printer, whether or not the user is present at that printer.

Chan does not disclose or remotely suggest a method or a spooling server apparatus for printing as set forth in Applicants' claims. In particular, Chan does not disclose or remotely suggest a system where the print jobs are initiated for printing at the spooling server in response to instructions received at the spooling server, as set forth in Applicants' claims.

The Newton and Pearson references were discussed in detail in Applicants' November 11, 2002 Response to the previous Office Action and such arguments are incorporated herein by reference. Chan does not cure the deficiencies noted in the cited references.

In view of the above, Applicants respectfully submit that the present invention would not have been obvious to one skilled in the art in view of Savitzky and Chan, taken alone or in combination with Newton and Pearson, or in view of any of the other references of record.

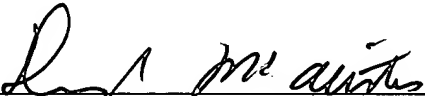
Withdrawal of the rejections under 35 U.S.C. § 103(a) is therefore respectfully requested.

Further remarks regarding the asserted relationship between Applicants' claims and the prior art are not deemed necessary, in view of the amended claims and the above discussion. Applicants' silence as to any of the Examiner's comments is not indicative of an acquiescence to the stated grounds of rejection.

Conclusion

The Examiner is respectfully requested to reconsider this application, allow each of the presently pending claims, and to pass this application on to an early issue. If there are any remaining issues that need to be addressed in order to place this application into condition for allowance, the Examiner is requested to telephone Applicants' undersigned attorney.

Respectfully submitted,



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